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**STATE OF CALIFORNIA  
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION**

In the Matter of the Application for a Small  
Powerplant Exemption for Chevron USA's  
Richmond Cogeneration Facility

Docket No. 86-SPPE-1

**PETITION TO MODIFY SMALL POWERPLANT EXEMPTION  
TO REMOVE LIMITATION ON SALES OF EXCESS POWER**

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Chevron U.S.A. Inc. (Chevron) seeks to modify the 1987 Small Power Plant Exemption (SPPE). Specifically, Chevron requests that the Commission employ its authority under Public Resources Code §25218 to lift the 44 GWh export limitation (Excess Sales Limit) imposed on the Richmond Cogeneration Facility (Facility). The Excess Sales Limit resulted from a 1987 stipulation among the Commission, Chevron and Pacific Gas & Electric Company (PG&E).<sup>1</sup> While the GWh limitation may have had a reasonable basis in 1987 when the Commission was responsible for determining the need for all new powerplants, the limitation has outlived its original purpose. Today, the limitation artificially stifles the export of excess power from the Facility and prevents Chevron from optimizing the use of cogeneration at the refinery.

**I. BACKGROUND**

On November 10, 1986, Chevron filed an application for an SPPE for the Facility. As described in the application, the Facility was designed to produce approximately 98 net MWs of electricity and 740,000 lb/hr of steam for use in the

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<sup>1</sup> In seeking this relief, Chevron represents that the Richmond refinery has contacted PG&E and that PG&E does not oppose the proposed SPPE modification.

refinery; during normal operations, the refinery consumed on average 118 MW of electricity.<sup>2</sup> As noted in the decision, Chevron would continue to purchase some electricity from PG&E during peak refinery operations and excess electricity would be available for sale to PG&E as the result of fluctuations in the level of refinery electrical use.<sup>3</sup>

The Commission evaluated Chevron's application to determine compliance with Public Resources Code §25541, which permits the Commission to exempt powerplants with a generating capacity of up to 100 MW from the site certification process if there are no substantial adverse impacts on the environment or energy resources. In evaluating the Facility's eligibility, the Commission addressed the following three conditions:

- Whether construction of the proposed facility will result in any substantial adverse impact on the environment or energy resources;
- Whether the proposed facility's generating capacity is no more than 100 MW so that it is eligible for an SPPE; and
- Whether the proposed facility complies with the demand conformance tests for self-generators set forth in the Energy Commission's 1986 Electricity Report (ER6).<sup>4</sup>

The decision concluded there would be no significant impact on the environment,<sup>5</sup> and that the proposed facility would have a maximum net design capacity of less than 100 MW.<sup>6</sup> Further consideration was required, however, to determine compliance with the third condition.

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<sup>2</sup> Docket No. 86-SPPE-1, *Commission Decision*, (October 7, 1987) at 7.

<sup>3</sup> Decision at 1.

<sup>4</sup> Decision at 3-4.

<sup>5</sup> Decision at 12 and 16.

<sup>6</sup> Decision at 34.

During the SPPE review, concerns were raised regarding whether the Facility could meet the demand conformance test established in ER6. To address this concern and enable the SPPE to be granted, the Commission directed the parties after the May 12, 1987 prehearing conference to meet and if possible, agree on a *de minimis* limit for annual power sales.<sup>7</sup>

In the original SPPE application, Chevron stated that less than 1 MW was expected to be sold to PG&E.<sup>8</sup> Finding 1 MW inconsequential, Staff sought a written commitment from Chevron to cap their sales in exchange for Staff's commitment to support the *de minimis* finding.<sup>9</sup> Chevron and Staff entered into a Stipulation in which Chevron agreed to "*sell no more than 44 GWH from the proposed facility to an electric utility in any calendar year for the Project's life.*"<sup>10</sup> In addition, Chevron agreed to comply with the reporting requirements for self-generators contained in ER6. With this Stipulation, Staff concluded that the power sold to PG&E would be *de minimis*, and would not require the preparation of a demand conformance analysis.<sup>11</sup> The Stipulation fulfilled the obligation to examine the power sales under ER6, requiring no further Staff analysis.<sup>12</sup>

PG&E, however, raised additional concerns regarding a "worst case" scenario and the potential displacement of core resources.<sup>13</sup> To assuage these concerns, Chevron, Staff and PG&E entered into a second stipulation in which Chevron agreed to the same provisions from the earlier Staff Stipulation;

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<sup>7</sup> Docket No. 86-SPPE-1, *Statement of Staff in Lieu of Testimony*, (06/04/87) at 2.

<sup>8</sup> Staff's Closing Brief at 18.

<sup>9</sup> Staff's Closing Brief at 18.

<sup>10</sup> Docket No. 86-SPPE-1, *Stipulation Between Staff and Chevron* (06/03/87) at 1.

<sup>11</sup> Chevron/Staff Stipulation at 1-2.

<sup>12</sup> Statement of Staff in Lieu of Testimony, at 2.

<sup>13</sup> Staff's Closing Brief at 20.

Chevron further agreed that it would not “*sell or deliver to PG&E more than 1 MW at any given time during 2000 curtailment hours for each calendar year.*” (PG&E Stipulation)<sup>14</sup> With the PG&E Stipulation, the Commission thus concluded that Chevron’s surplus sales of 5 MW per year and 1 MW during off-peak periods were *de minimis* because the sales would be so small and any impact to the core resources would be immeasurable.<sup>15</sup> The Commission concluded that the project complied with the physical need test since there was no demonstrable impact on core resources.<sup>16</sup>

## **II. REMOVAL OF THE EXCESS SALES LIMITATION FROM THE RICHMOND COGENERATION FACILITY IS IN THE PUBLIC INTEREST**

While the Excess Sales Limit may have served a purpose in 1987, the purpose has been overtaken by time and circumstances. The passage of 19 years since the PG&E Stipulation was adopted has brought significant regulatory change, which has materially modified the Commission’s needs assessment. In addition, forecasts and reports point to a need for more electricity and state a desire to encourage combined heat and power projects. Set in this context, limiting exports from the Facility at a time when the state needs more energy is counterproductive. Moreover, the Excess Sales Limit operates today to prevent Chevron from optimizing its operation of the Facility. For these reasons, it is in the public interest to re-evaluate the excess sales limitation in light of these changes.

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<sup>14</sup> Docket No. 86-SPPE-1, *Stipulation by Staff, Applicant, and Intervenor Pacific Gas and Electric Company*, (09/28/87) at 1-2.

<sup>15</sup> Decision at 41.

<sup>16</sup> Decision at 42.

**A. Lifting the Excess Sales Limit Would Permit Chevron to Increase Generation and Delivery of Electricity to the Grid and Optimize the Facility's Operation.**

Two constructive purposes can be served by lifting the Excess Sales Limit from the Facility's SPPE. By permitting an increase in exports from the Facility, the Commission will increase the supply available to the market and permit Chevron to optimize the Facility's operation.

Chevron has the potential today to export more than 44 GWh to the grid from the Facility. This potential results in large part from efficiency upgrades to the Facility. In March 2006, Chevron modified the principle components of the original facility with the addition of a 28 MW (capacity) automatic extraction, backpressure steam turbine. The new steam turbine generator displaces a number of older less efficient turbines in the refinery. The new electrical generator is connected to the existing electrical substation which provides power to both the refinery and PG&E. The facilities can now produce a net total of 120 MW of useful power and deliver the associated steam to the refinery. The average net electric output is expected to be an average of 114.2 MW.<sup>17</sup> Taking refinery load into account, the Facility now has the potential to export to the grid up to 60 MW during refinery process equipment maintenance periods, for a total of up to 200 GWh annually in years that such maintenance occurs.

Beyond this efficiency gain, the Richmond Refinery has the potential for further expansion of self-generation. The refinery's new hydrogen manufacturing complex includes an extraction/condensing steam-turbine generator to optimize

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<sup>17</sup> See FERC Form 556, Chevron U.S.A. Inc. Richmond Refinery, QF86-1097-001 (07/14/06).

energy levels of process steam and balance hydrogen complex and refinery steam demand. With these changes, the ability of the Richmond Refinery to deliver excess power to the market is expected to increase to 250 GWh/year during process equipment maintenance years.

In addition to the increased electricity supply that would result from a lifting of the Excess Sales Limit, taking this action would permit Chevron to optimize the operation of the Facility. Cogenerating electricity with steam is more energy efficient than minimizing electric generation while producing the process-required steam in significantly less efficient boilers.

#### **B. The State Needs Increased Electricity Supply.**

The generation and delivery of additional electricity by the Facility would respond to statewide concerns regarding electricity supply. These concerns have been raised both by this Commission and the California Public Utilities Commission (CPUC).

This Commission raised specific concerns regarding electricity supply in the 2005 Integrated Energy Policy Report (IEPR):

- **Peak Needs:** Demand has grown for peak resources, “[t]he generation system must be able to accommodate...high summer peaks, in addition to the demand swings caused by weather variability and the economy.”<sup>18</sup> According to the 2005 IEPR, by 2016, utilities will need to procure approximately 24,000 MW of peak resources to replace expiring contracts and retiring power plants.<sup>19</sup>

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<sup>18</sup> 2005 IEP at 49.

<sup>19</sup> 2005 IEP at 52.

- **Reserve Margins:** As provided in the 2005 IEP, by June 1, 2006, the CPUC will require the state's IOUs to maintain 15-17 percent planning reserve margins.<sup>20</sup>

The IEPR further observed that “[e]lectricity supplies are not keeping up with demand.”<sup>21</sup> Electric consumption has increased almost 3% from 2001 to 2004<sup>22</sup> and 2% over the last two years.<sup>23</sup> The Energy Commission has certified and approved the construction of 22,386 MW of capacity since restructuring was implemented in 1998 but only 13,805 MW have come online.<sup>24</sup>

The IEPR's concerns about supply shortages have been echoed in recent decisions by the CPUC. In D.06-06-035, the CPUC modified a Settlement Agreement approving PG&E's acquisition of the Contra Costa 8 generating facility. In that decision, the CPUC states:

*PG&E also notes that the project furthers the Long-Term Procurement Plan adopted for PG&E in 2004, which found that **new capacity is needed in northern California in 2008 and 2010**. PG&E states that “because the facility is already substantially permitted and partially completed, CC8 could provide northern California with an additional 530 MW of generation as soon as summer 2008.” (PG&E Application, p. 1-4.) Finally, PG&E points out that “[t]his close-in Bay Area location is **beneficial for serving the heavy load concentration in the Bay Area**.” (PG&E Application, p. 1-2.) No party disputed these facts.<sup>25</sup>*

Decision 06-07-029, adopted July 20, 2006 -- the Phase I decision issued in the long-term procurement proceeding (R.06-02-013) – also concludes that California needs new generation. “[W]e found that in order to maintain adequate capacity and reserves throughout the state, 3,700 megawatts (MW) of **new**

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<sup>20</sup> 2005 IEPR at 52.

<sup>21</sup> 2005 IEPR at 45.

<sup>22</sup> 2005 IEPR at 47.

<sup>23</sup> 2005 IEPR at 50-51.

<sup>24</sup> 2005 IEPR at 50-51.

<sup>25</sup> D.06-06-035, at 11 (emphasis added).



**generation must come on line beginning in 2009.”**<sup>26</sup> In particular, it finds that PG&E has a need for 2,200 MW of new generation and SCE has a need for 1,500 MW of new generation.<sup>27</sup> President Peevey’s Ruling, issued last August in Rulemakings 05-12-013 and 06-02-013 likewise concluded, “*Last month’s heat storm [July 2006], and the evident and surprising growth in demand that had occurred even before the heat storm, give rise to the need for further action.*”<sup>28</sup> Notably, this “further action” is required even after PG&E’s acquisition of Contra Costa 8, and the 3700 MW of new generation referenced in D.06-07-029. In D.06-11-048, the CPUC granted PG&E’s request for expedited approval of its long-term Request-For-Offer results to avoid “*the risk that necessary resources will not be on line by the 2009 and 2010 summer peak periods.*”<sup>29</sup> These recent CPUC decisions highlight the continuing supply concerns faced by California in general, and by PG&E’s service territory in particular.

Not only will the additional power from the Facility respond to recent policy direction for more supply, the response comes in the form of the “right” supply. The 2005 IEPR notes an “important alternative” to new large power plants to meet these objectives: efficient, cost-effective distributed generation. With the goal of encouraging heat and power systems, the Commission supports establishing annual utility procurement targets for combined heat and power facilities by the end of 2006 and having the CPUC require investor-owned utilities to purchase electricity from combined heat and power facilities at prevailing

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<sup>26</sup> D.06-04-029, at 3 (emphasis added); see also D.06-07-029, at 55 (Findings of Fact ¶¶12-14).

<sup>27</sup> Id. at 54 (Finding of Fact ¶4).

<sup>28</sup> August 15 Peevey Ruling, at 3 (emphasis added).

<sup>29</sup> D.06-11-048, at 3.

wholesale prices.<sup>30</sup> The IEPR states that “[c]urrent state policy must change for California to tap into this potential generation source and retain the existing pool of combined heat and power facilities so critical to reliable operation of the state grid.”<sup>31</sup>

Little doubt exists that additional electricity supply is required. Moreover, power produced with combined heat and power applications brings the state numerous benefits, particularly in light of AB32’s drive toward lower carbon emissions. These conditions underscore the need to lift the Facility’s Excess Sales Limit.

**C. The ER6 Demand Conformance Test Should No Longer Stand in the Way of Chevron’s Exports.**

As observed above, the demand conformance analysis of new powerplants has changed significantly since 1987 when the SPPE was granted. In 1987, in order to qualify for an SPPE, Public Resources Code §25541(b) required that the project not be substantially in excess of the Commission’s latest adopted forecast of energy demands, at that time, ER6.<sup>32</sup> ER6 provided that the bulk of power produced by the project is usually intended for internal use and only a small portion of the power output is normally sold to the utility.<sup>33</sup> As provided in Staff’s Closing Brief in the Chevron docket, to qualify as a self-generation project under ER6, no more than 10% of the project’s power could be sold to a utility system, although an applicant could present appropriate evidence

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<sup>30</sup> 2005 IEPR at 3.

<sup>31</sup> 2005 IEPR at 3.

<sup>32</sup> Decision at 35. Note that Pub. Res. Code §25541(b) is no longer in use.

<sup>33</sup> Decision at 35.

demonstrating why selling in excess of 10% to a utility would still be considered self-generation.<sup>34</sup> The Facility complied with ER6, selling slightly less than 5% to PG&E.

The ER6 Need Assessment Principles required the applicant to demonstrate that the project's planned operation would not result in any curtailment or displacement of core resources within the affected utility service area for the 12-year forecast period beginning with the year in which the Facility was scheduled to begin operations.<sup>35</sup> Evidence submitted clearly demonstrated that the excess sales would be so small that it could not be modeled.<sup>36</sup>

Demand conformance is no longer required to be determined in a siting case and the IEPR has replaced the Electricity Report.<sup>37</sup> Moreover, since 1987, regulation of the California electric market has changed markedly. Policy changes effectuated by the Federal Energy Regulatory Commission to encourage wholesale market development, along with the enactment of AB1890 in 1996, set California on a different course. Generation development has moved from a strict determination based on utility need to a market-based determination. This change was indeed acknowledged by the Commission directly in Electricity Report 96, where it observed “[t]he Energy Commission...faces a challenge in refining its ‘need criteria’ so that they are appropriate in a competitive market.”<sup>38</sup> In ER96, the Commission took a slightly different approach, determining that the need assessment would consist of a

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<sup>34</sup> Docket No. 86-SPPE-1, *Staff's Closing Brief on Remaining Issues*, (07/08/87) at 15-16.

<sup>35</sup> Decision at 37.

<sup>36</sup> Staff's Closing Brief at 18.

<sup>37</sup> Pub. Resources Code § 25300 et seq.

<sup>38</sup> California Energy Commission, *1996 Electricity Report*, (Amended May 12, 1999) at 65.

basic comparison of the need identified in the demand forecast with likely future supplies.<sup>39</sup>

In large part because of the regulatory changes, the 19-year evolution of the needs assessment has broadened from a territorial view to broader consideration of regional supply and demand changes. Lifting the Excess Sales Limit is appropriate in light of these changes.

### **III. CONCLUSION**

For all of the foregoing reasons, Chevron respectfully requests that the Commission lift the Excess Sales Limit adopted in the 1987 SPPE.

Respectfully submitted,

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<sup>39</sup> ER96 at 68.